oms

Organic Mass Spectrometry

1991 **Volume 26**

ORMSBG 26(1–12) 1–1136 (1991)
ISSN 0030–493X

WILEY
Publishers Since 1807

Organic Mass Spectrometry

THE INTERNATIONAL JOURNAL OF MASS SPECTROMETRY AND GAS PHASE ION CHEMISTRY

EDITOR-IN-CHIEF

Professor PETER J. DERRICK

Warwick Institute of Mass Spectrometry and Department of Chemistry, University of Warwick, Coventry CV4 7AL, UK

FOUNDER EDITOR-IN-CHIEF

Professor ALLAN MACCOLL

University College, 20 Gordon Street, London WC1H 0AJ

EDITORS

Professor B. T. CHAIT

The Rockefeller University, New York, NY 10021-6399, USA
Specialist office: Ion formation from biological solids

Professor O. S. CHIZHOV

N. D. Zelinsky Institute of Organic Chemistry, Academy of Sciences of the USSR, Moscow B 334, Leninsky Prospect 47, USSR

Professor H.-Fr. GRÜTZMACHER

Fakultät für Chemie, Universität Bielefeld, PO Box 8640, 48 Bielefeld, Universitätsstrasse 25, Germany.

Professor J. L. HOLMES

Department of Chemistry, University of Ottawa, Ottawa, Ontario K1N 6N5, Canada

Dr J. K. MACLEOD

Research School of Chemistry, Australian National University, Canberra, A.C.T. 2600, Australia

Professor M. ÔHASHI

Department of Applied Physics and Chemistry, The University of Electro-Communication, Chofu, Tokyo 182, Japan

Professor D. P. RIDGE

Department of Chemistry, University of Delaware, Newark, Delaware 19711, USA
Specialist office: Ion–molecule reactions

ASSOCIATE EDITOR

Dr R. T. B. RYE

Ottawa Editorial Office

ADVISORY BOARD

Prof. T. Ast, *University of Belgrade*
Dr J. A. Ballantine, *University College of Swansea*
Prof. A. Benninghoven, *University of Munster*
Dr M. V. Buchanan, *Oak Ridge National Laboratory*
Prof. H. Budzikiewicz, *University of Cologne*
Prof. M. M. Bursey, *University of North Carolina*
Prof. R. G. Cooks, *Purdue University*
Dr F. H. Cottee, *SmithKline Beecham Pharmaceuticals*
Dr I. K. Gregor, *University of New South Wales*
Prof. M. L. Gross, *University of Nebraska*
Dr S. Hammerum, *University of Copenhagen*
Dr V. Hanus, *Czechoslovak Academy of Science, Prague*
Prof. A. G. Harrison, *University of Toronto*
Dr Y. Hoppilliard, *Ecole Polytechnique*
Prof. K. R. Jennings, *Warwick University*
Prof. F. P. Lossing, *University of Ottawa*
Prof. F. W. McLafferty, *Cornell University*
Dr A. Mandelbaum, *Technion, Haifa*
Prof. T. Matsuo, *Osaka University*
Prof. M. S. B. Munson, *University of Delaware*
Prof. N. M. M. Nibbering, *University of Amsterdam*
Prof. F. W. Röllgen, *University of Bonn*
Dr B. Rozynov, *Academy of Sciences of the USSR*
Prof. D. H. Russell, *Texas A & M University*
Prof. A. Selva, *Milan Polytechnic*
Prof. B. U. R. Sundqvist, *Uppsala University*
Prof. A. Tatematsu, *Meijo University*
Prof. J. K. Terlouw, *McMaster University*
Dr C. B. Thomas, *University of York*
Prof. J. F. J. Todd, *University of Kent, Canterbury*
Prof. M. Tsuchiya, *Yokohama National University*
Dr E. S. Waight, *Imperial College, London*
Prof. V. G. Zaikin, *Academy of Sciences of the USSR*

Copyright © 1991 by John Wiley & Sons, Ltd.

COPYING OF ARTICLES

The code and the copyright notice appearing at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients, on the condition that the copier pay for copying beyond that permitted by Sections 107 or 108 of the US Copyright Law. The per-copy fee for each article appears after the dollar sign, and is to be paid through the Copyright Clearance Center Inc. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Such permission requests, or other inquiries, should be addressed to the publisher.

Printed in Great Britain by Page Bros (Norwich) Ltd, Norwich

Contents of Volume 26

NUMBER 1 JANUARY 1991

Accounts

Electron Impact and Hyperthermal Surface Ionization Mass Spectrometry in Supersonic Molecular Beams 1
A. AMIRAV

Competition in the Formation of Ion–Neutral Complexes. Expulsion of Methane from the Molecular Ion of Acetamide 18
T. H. MORTON

Electron Impact and Methane Chemical Ionization Mass Spectrometry of Trisilanes and Trisiloxanes 24
Z-S. LIN, S-H. WU AND Z-P. YAO

Mass Spectra of Some α-Substituted Phenyl-α,α′-dimethoxyl Ketones and their Derivatives 29
G-Q. CHEN AND P. ZHANG

Characteristic *Ortho*-Methoxycarboxylate Fragmentation of Yerrinquinone and its Derivatives on Electron Impact 33
M. VAIRAMANI, B. NAGESWARA RAO AND M. PARDHASARADHI

The Acid Effect in Fast Atom Bombardment 38
J. SHIEA AND J. SUNNER

New Mass Spectra

Mass Spectra of Substituted Dihydrochalcones 45
K. V. WOOD, C. C. BONHAM, M. L. WHITELAW AND J. R. DANIEL

Mass Spectra of ω-Substituted α-Trimethylsilyl Phenylsulfones 47
K. V. WOOD, A. P. ROTHWELL, D. SCARPETTI AND P. L. FUCHS

OMS Letters

Electron Impact Mass Spectra of Some Substituted Benzylglyoxal *p*-nitrophenylosazones 50
G-Q. CHEN AND P. ZHANG

Reactions of Cu(II) with α-Amino Acids Investigated by Fast Atom Bombardment (FAB) Mass Spectrometry 51
P. M. LAUSAROT, L. OPERTI AND G. A. VAGLIO

NUMBER 2 FEBRUARY 1991

$[C_7H_7]^+$ and $[C_6H_5]^+$ Fragment Ions Produced from Methylphenol Isomers by Electron Impact 55
E. T. M. SELIM, M. A. FAHMEY AND H. S. GHONIME

Determination and Enhancement of Stereospecific Decompositions via Triple Mass Spectrometry: Formation of Untypical Protonated Precursor Molecules 59
R. B. COLE AND J-C. TABET

A Combined Theoretical and Experimental Approach to the Unimolecular Loss of Molecular Hydrogen from Protonated Formaldehyde: Determination of the Average Internal Energy of Metastable $[CH_2OH]^+$ Ions 67
G. HVISTENDAHL AND E. UGGERUD

^{252}Cf Plasma Desorption Mass Spectrometry of Some Group 8 Metal-containing Coordination Compounds 74
P. A. van VEELEN, U. R. TJADEN, J. van der GREEF AND R. HAGE

Fast Atom Bombardment Mass Spectrometry of Some Alkoxy- and Chloro-silanes 81
K. M. R. KALLURY, U. J. KRULL AND M. THOMPSON

Electron Impact and Chemical Ionization Mass Spectra of Some Unsaturated Anomeric *C*-Glycosides 85
M. BRAKTA, P. LHOSTE, D. SINOU AND J. BANOUB

Mass Spectra of Some Diazadiamides 89
K. SHU, Y-L. LIOU AND C-S. CHUNG

Electron Impact Mass Spectra of Some Nickel(II) and Palladium(II) Complexes of Diphenylphosphinoacetone and 3-Diphenylphosphinobutan-2-one 92
P. HADJIEVA, G. PETROV AND E. M. GEORGIEV

Electron Impact Mass Spectra of Novel Tetrahydroimidazo[4,5, 1-*jk*][1,4]benzodiazepin-2(1*H*)-one Derivatives 97
G. W. CALDWELL, M. J. KUKLA, J. A. MASUCCI, H. J. BRESLIN, W. J. JONES, D. A. GAUTHIER AND C. L. FEDDE

Electron Impact-induced Fragmentation of Some Aminonitropyridines 100
R. GAWINECKI AND D. RASAŁA

Mass Spectral Fragmentation Pathways of *N*-Acetylnitramines: 1-Acetylhexahydro-3,5-dinitro-1,3,5-triazine and 1-Acetyloctahydro-3,5,7-trinitro-1,3,5,7-tetrazocine 105
E. P. BURROWS

Electron Impact Mass Spectra of New 5-Substituted-2-amino-2-oxazolines 109
G. BOURGEOIS, C. JARRY, J. J. BOSC, G. DELERIS AND E. PAYS

New Mass Spectra
Electron Impact Mass Spectrometry of Substituted *s*-Triazolo[4,3-*a*][1,5]benzodiazepin-1-ones 113
E. C. CORTÉS, R. MARTINEZ, M. UGALDE AND N. MALDONADO

OMS Letters
New Basis for a Method for the Estimation of Secondary Ion Internal Energy Distribution in 'Soft' Ionization Techniques 117
F. DERWA, E. DE PAUW AND P. NATALIS

A Comparison of the Electron Impact Induced Decomposition Pathways of (2-Methoxyphenyl), (3-Methoxyphenyl) and (4-Methoxyphenyl)trimethylstannane 119
O. CURCURUTO, P. TRALDI, G. CAPOZZI AND S. MENICHETTI

NUMBER 3 MARCH 1991

Assignment of Isomeric Hydroxyhydantoins: Linked-scan, Tandem and High-resolution Studies 125
B. ONISKO, L. CHANG AND S. LEWIS

Electron Impact Mass Spectrometry of Some 3-Substituted 1,2,3,4-Tetrahydroisoquinolines 132
A. F. IBAÑEZ AND G. Y. MOLTRASIO IGLESIAS

Mass Spectra of Liquid Crystals. III—Phenylpyrimidine Derivatives 135
P. A. LECLERCQ AND H. M. van den BOGAERT

Mass Spectra of Liquid Crystals. IV—Diphenylethyne Derivatives (Nematic Tolans) 139
P. A. LECLERCQ AND H. M. van den BOGAERT

Mass Spectra of Liquid Crystals. V—Cyclohexyl and Phenyl Esters of Cyclohexanecarboxylic and Benzoic Acids 142
P. A. LECLERCQ AND H. M. van den BOGAERT

Fragmentations of Peptide Derivatives Depending on the Positions of Proline in Negative-ion Fast Atom Bombardment Mass Spectrometry 147
H. TSUNEMATSU, S. NAKASHIMA, S. YOSHIDA, M. YAMAMOTO AND R. ISOBE

Ammonia/Desorption Chemical Ionization Mass Spectrometry of Some Cyclopentane Iridoid Glucosides 151
P. A. DEMIREV, N. HANDJIEVA, H. SAADI, S. S. POPOV, O. S. RESHETOVA AND B. V. ROZYNOV

Reduction Processes in Fast Atom Bombardment Mass Spectrometry: Methylene Blue in Glycerol–Thioglycerol and Glycerol–Nitrobenzyl Alcohol Matrices 154
C. W. KAZAKOFF AND R. T. B. RYE

Mass Spectra of Trimethylsilyl Derivatives of Naturally Occurring Flavonoid Aglycones and Chalcones 157
C. S. CREASER, M. R. KOUPAI-ABYAZANI AND G. R. STEPHENSON

Structural Study of Mn(III)–Tetraarylporphyrin Complexes by Fast Atom Bombardment Mass Spectrometry 161
F. M. RUBINO, P. MASCARO, S. BANFI AND S. QUICI

Instrumentation and Methods

Accurate Mass Measurements of Organic Compounds by an Internal Standard Method for Laser Desorption/Electron Impact Fourier Transform Mass Spectrometry 167
C.-G. JIANG, L.-S. SHENG AND D.-K. AN

OMS Letters

Protonated Molecular Species of Phosphatidylserines by Field Desorption Mass Spectrometry 170
A. SELVA, E. REDENTI AND P. VENTURA

Influence of Fluoro Atoms on the Spontaneous and Collision-induced Fragmentation of the Ions $[M - OCH_3]^+$ and $[M + NH_4]^+$ of per-*O*-acetylated Methyl *x*-Deoxy-*x*-fluoro-α-D-glucopyranosides 171
V. KOVÁČIK, P. KOVÁČ AND H.-Fr. GRÜTZMACHER

The Conformation of an Iron Porphyrin Ion with a 'Tethered Base' 173
H. L. CHEN, T. E. HAGAN, S. E. GROH AND D. P. RIDGE

Inhibition of the Reduction Process Occurring in Liquid Secondary Ion Mass Spectrometry (LSIMS)/Fast Atom Bombardment (FAB) 175
A. AGNELLO AND E. DE PAUW

NUMBER 4 APRIL 1991

THIS ISSUE IS DEDICATED TO PROFESSOR JAMES D. MORRISON ON THE OCCASION OF HIS RETIREMENT FROM LA TROBE UNIVERSITY

Editorial 179

Jim Morrison—Mass Spectrometrist for All Seasons 181
F. W. McLAFFERTY

Personal Reminiscences of Forty Years of Mass Spectrometry in Australia 183
J. D. MORRISON

Production of Metal Atoms, Clusters and Complexes in Pulsed Discharge-excited Jets: Studies via Mass-resolved Laser Multiphoton Ionization 195
M. A. BUNTINE, D. C. McGILVERY AND R. J. S. MORRISON

Photoelectron Spectroscopy of the Oxygen Dimer and Clusters 201
F. CARNOVALE, J. B. PEEL AND R. G. ROTHWELL

Determination of the Proton Affinity of Carbon Dioxide by Photoionization Mass Spectrometry 209
J. C. TRAEGER AND B. M. KOMPE

A Laser Desorption Fourier Transform Mass Spectrometric Study of Dimethyl 8-Acetyl-3,7,12,17-tetramethylporphyrin-2,18-dipropanoate 215
T. H. NGUYEN, P. S. CLEZY, G. D. WILLETT, G. L. PAUL, J. TANN AND P. J. DERRICK

Theoretical Study of the Structure and Unimolecular Decomposition Pathways of Ethyloxonium $[CH_3CH_2OH_2]^+$ 227
D. J. SWANTON, D. C. J. MARSDEN AND L. RADOM

Low-energy, Low-temperature Mass Spectra. 14—A Simple Model for the Rate Coefficient 235
A. MACCOLL

Study of the Rate of Methyl Loss and the Structure of the Product Ion as a Function of the Lifetime of the Molecular Ion of Pent-3-en-2-ol 241
H. W. ZAPPEY, S. INGEMANN AND N. M. M. NIBBERING

Elimination of Carbon Monoxide by Electron Impact on Quinoline *N*-oxide, Carbostyril and 8-Hydroxyquinoline 247
T. BLUMENTHAL, R. G. GILLIS, Q. N. PORTER AND L. L. YEOH

Collision-induced Dissociations of Deprotonated Peptides. Dipeptides Containing Aspartic or Glutamic Acids 250
R. J. WAUGH, J. H. BOWIE AND R. N. HAYES

Instrumentation and Methods

Cold-cathode Ion Source for Sputtered Neutral Mass Spectrometry of Metals 257
D. L. SWINGLER

REGULAR APRIL-ISSUE PAPERS

Repeller-induced Dissociation of Alkyl Alcohols in Thermospray Mass Spectrometry 263
J. SAAR, M. HAIMBERG AND C. CHENIER

Linear Dependence of the Intensity of the $[M + H]^+$ Ion Peak in Fast Atom Bombardment Mass Spectrometry on the Basicity of *meso*-Substituted Octaethylporphyrins 267
L. YAN, Y.-W. FANG, X.-Y. LIANG, G.-Z. WU AND H.-K. LEUNG

$[C_6H_6,C_3H_7^+]$ and $[C_6H_7^+,C_3H_6]$ Ion–Neutral Complexes Intermediate in the Reactions of Protonated Propylbenzenes 271
D. BERTHOMIEU, H. AUDIER, J.-P. DENHEZ, C. MONTEIRO AND P. MOURGUES

Mass Spectra of Liquid Crystals. VI—Alkylbicyclohexyl Ethers, Dioxanylbenzonitrile Derivatives and Other Classes of Compounds 276
P. A. LECLERCQ AND H. M. van den BOGAERT

Studies in Organic Mass Spectrometry. Part 9—Mass Spectra of 9,10-Disubstituted 2,3,6,7-Tetraalkoxy-9,10-dihydroanthracenes: a Remarkable Loss of Radicals from Even-electron Ions 279
L. CERAULO, P. AGOZZINO, M. FERRUGIA, L. LAMARTINA AND M. C. NATOLI

Highly Specific Fragmentation Processes of Isomeric Mixed Esters of Phenylsuccinic Acid Under Electron Impact 287
I. VIDAVSKY, A. MANDELBAUM, T. TAMIRI AND S. ZITRIN

Comparative Study of the Behaviour of 1*H*-Indazoles and 1-(*p*-Aminophenyl)indazoles Under Electron Impact 293
R. ERRA-BALSELLS

Metastable Ion Decomposition and Collisional Activation Mass Spectra of 1,2,3-Triarylpropen-1-ones 298
K. P. MADHUSUDANAN, S. DURANI, D. M. REDDY, R. S. KAPIL, Y. ITAGAKI AND K. NOJIMA

Unusual Neutral and Radical Losses in 2′-Substituted *N*-Phenylanthranilic Acids on Electron Impact 305
D. V. RAMANA, R. SRINIVAS AND P. MAHALAKSHMI

Analysis of Regioisomers of *α-O-* and *α-N*-Substituted Oxazolidines Using Tandem Mass Spectrometry with Electron Impact and Ammonia Chemical Ionization 311
C. LANGE, J.-C. CHERTON, D. LADJAMA AND C. PARIS

Oligosaccharide Characterizations by Fast Atom Bombardment Mass Spectrometry. Fragmentation Study in Relation to the Substituent at the Reducing End 321
C. BOSSO, A. HEYRAUD AND L. PATRON

Instrumentation and Methods

Combined Gas Chromatography/Tandem Mass Spectrometry Using Laser Photodissociation 335
C. S. CREASER, M. R. S. McCOUSTRA AND K. E. O'NEILL

OMS Letters

Hydrogen Transfer and Alkyl Radical Addition via [Hydrocarbon/Alcohol]$^{+\cdot}$ Ion–Molecule Complexes 339
P. MOURGUES, H. E. AUDIER AND S. HAMMERUM

Matrix-assisted UV Laser Desorption. Suppression of the Matrix Peaks 342
T.-W. D. CHAN, A. W. COLBURN AND P. J. DERRICK

Sequence-informative Fragmentation in an 8.9 kDa Oligopeptide using Plasma Desorption Mass Spectrometry 345
P. A. van VEELEN, U. R. TJADEN, J. van der GREEF AND N. D. de WITH

A Comparison Between Ion Trap and Triple Quadrupole Collision-results 347
C. EVANS, P. TRALDI, A. MELE AND C. SOTTANI

NUMBER 5 MAY 1991

A COLLECTION OF PAPERS FROM THE SILVER JUBILEE MEETING OF THE BRITISH MASS SPECTROMETRY SOCIETY

Silver Jubilee Issue: Introduction 351

Mass Spectrometry in Retrospect: 25 Years and More 353
J. H. BEYNON

Chemistry by Computer: a Theoretical Approach to Gas-phase Ion Chemistry. The 1990 Allan Maccoll Lecture 359
L. RADOM

Recent Developments in Mass Spectrometry: a Review of Instrumentation and Applications 374
T. MATSUO

Energy Studies of Atomic Atmospheric Ions in Collisions with Molecular Nitrogen and Oxygen 389
C. S. ENOS, A. R. LEE AND A. G. BRENTON

Collision-induced Decomposition of Peptides. An Investigation into the Effect of Collision Gas Pressure on Translational Energy Losses 395
C. D. BRADLEY AND P. J. DERRICK

Breakdown Diagrams for Low-mass Cations from Angle-resolved Mass Spectrometric Measurements 402
C. J. REID

Ion–Neutral Complexes from Protonated Propyl Phenyl Ethers. Gas-phase Solvolysis versus Elimination–Readdition 410
R. W. KONDRAT AND T. H. MORTON

Dissociation of the Tertiary Butanol Radical Cation 416
W. BEVERIDGE, I. W. GARIOCH, J. A. HUNTER, C. A. F. JOHNSON AND J. E. PARKER

Mass Spectra of Alkenyl Methyl Ethers 421
R. D. BOWEN, A. D. WRIGHT, S. R. THOMAS, K. R. JENNINGS AND A. MACCOLL

Gas-phase Ring-chain Tautomerism in 1,3-Oxazines. Does it Exist? 438
P. VAINIOTALO, F. FÜLÖP AND K. PIHLAJA

Factors Affecting Immonium Ion Intensities in the High-energy Collision-induced Decomposition Spectra of Peptides 443
T. MADDEN, K. J. WELHAM AND M. A. BALDWIN

Determination of Enzyme Kinetic Parameters of Cyclic CMP-specific Phosphodiesterase by Quantitative Fast Atom Bombardment Tandem Mass Spectrometry 447
R. P. NEWTON, J. A. KHAN, D. GHOSH, J. I. LANGRIDGE, A. G. BRENTON, F. M. HARRIS AND T. J. WALTON

Routine Liquid Chromatography/Fast Atom Bombardment Mass Spectrometry of Peptides and Enzymatically Digested Proteins 454
D. J. BELL, M. D. BRIGHTWELL, M. HARAN, W. A. NEVILLE AND A. WEST

Synthesis and Characterization by Fast Atom Bombardment Mass Spectrometry of Peptides Related to the B-domain of Staphylococcal Protein A 458
R. WAIT, B. JAMES AND M. R. CALDER

Instrumentation and Methods

A Novel Quadrupole, Quistor, Quadrupole Tandem Mass Spectrometer 463
P. KOFEL, H. REINHARD AND U. P. SCHLUNEGGER

REGULAR MAY-ISSUE PAPERS

Mechanism of Formation of Alkali Metal Cation Adducts in Plasma Desorption Mass Spectrometry of Biomolecules 471
P. DEMIREV, D. FENYÖ, P. HÅKANSSON AND B. U. R. SUNDQVIST

Neutralization–Reionization Mass Spectrometry: Efficiency of the Charge-exchange Process 476
C. E. C. A. HOP AND J. L. HOLMES

Searching for the Ionized Alkene/Alkanol Complexes $[C_2H_4^{+\cdot}/HOCH_3]$ and $[C_2H_4^{+\cdot}/HOCH_2CH_3]$ 481
J. R. CAO, M. GEORGE AND J. L. HOLMES

Evaluation of Nitric Oxide Chemical Ionization Mass Spectra of Substituted Benzenes 486
S. DAISHIMA, Y. IIDA AND F. KANDA

Mass Spectrometric Study of Some Cycloalkane/ene-condensed 2-Thioxo-2,3,5,6-pyrimidin-4(1*H*)-ones and Cycloalkane/ene-condensed [1,3]Thiazino[3,2-*a*]-pyrimidinones Under Electron Impact 493
M. HIMOTTU, K. PIHLAJA, G. STÁJER, G. BERNÁTH AND P. VAINIOTALO

Experiments on the Formation of Acylium Ions from Alkenic Compounds Following Chemical Ionization with NO^+ 498
B. SCHNEIDER AND H. BUDZIKIEWICZ

Electron Impact Mass Spectrometry of Praziquantel Derivatives 503
R. MARTINEZ, M. F. RUBIO, A. R. C. ROSADO AND M. B. P. IBARRA

Rearrangements in the Mass Spectra of α-Phenylcinnamic Acid and Its Derivatives 505
K. P. MADHUSUDANAN, V. S. MURTHY, D. FRAISSE AND M. BECCHI

Novel Fragmentation of *N*-Diisopropyloxyphosphoryl Dipeptides and Tripeptides by Fast Atom Bombardment Mass Spectrometry 510
Y.-F. ZHAO, D.-Q. ZHANG, C.-B. XUE, J.-N. ZENG AND G.-J. JI

Instrumentation and Methods
The 'Infinity Cell': a New Trapped-ion Cell with Radiofrequency Covered Trapping Electrodes for Fourier Transform Ion Cyclotron Resonance Mass Spectrometry 514
P. CARAVATTI AND M. ALLEMANN

Mechanisms of Repeller-induced Effects in Thermospray Liquid Chromatography/Mass Spectrometry 519
C. E. M. HEEREMANS, R. A. M. van der HOEVEN, W. M. A. NIESSEN, J. van der GREEF AND N. M. M. NIBBERING

OMS Letter
Mass Spectral Analysis of Diaminodithiol Ligands Used for the Complexation of Technetium-99m 528
R. H. MACH AND H. F. KUNG

NUMBER 6 JUNE 1991

Editorial 533

PAPERS DEDICATED TO PROFESSOR JAMES D. MORRISON ON THE OCCASION OF HIS RETIREMENT FROM LA TROBE UNIVERSITY

Ionization Energies of Homologous Organic Compounds and Correlation with Molecular Size 537
J. L. HOLMES AND F. P. LOSSING

Formation of Charged Clusters During Electrospray Ionization of Organic Solute Species 542
C. K. MENG AND J. B. FENN

Association Reactions of Trimethylsilyl Ions 550
Y. LIN, D. P. RIDGE AND B. MUNSON

Instrumentation and Methods
A Personal Computer-based Data Control Interface for Neutralization–Reionization and Tandem Mass Spectrometry 559
D. E. DRINKWATER, F. TURECEK AND F. W. McLAFFERTY

REGULAR JUNE-ISSUE PAPERS

Accounts
Energetics and Kinetics of Collision-activated Decomposition of Polyatomic Ions at Kiloelectronvolt Translational Energy 565
M. S. KIM

Nature of Methyl Cation Bonding to Dihydroxybenzenes Elucidated Using an Ion Trap Mass Spectrometer 575
B. D. NOURSE, J. S. BRODBELT AND R. G. COOKS

Mass Spectra of 2- and/or 6-Alkyl-3-hydroxypyridines 583
S.-T. LIN, L.-L. TIEN, Y.-H. KUO AND K.-S. SHIH

Site of Gas-phase Methylation of 1-Phenyl-2-aminopropane 587
H. ZAPPEY, R. H. FOKKENS, S. INGEMANN, N. M. M. NIBBERING AND H. FLORENCIO

Electron Impact Ionization Mass Spectrometry and Tandem Mass Spectrometry of Phenylalkylpyridazines 595
E. PITTENAUER, G. ALLMAIER, E. R. SCHMID, W. STANEK AND G. HEINISCH

Unimolecular Gas-phase Reactions of the Methyl Acetoacetate Radical Cation. Oxygen Atom Permutation via Ion–Molecule Complexes 601
D. BERTHOMIEU, J. TORTAJADA, J.-P. MORIZUR AND H.-E. AUDIER

Identification of Caffeine and its Metabolites in Human Urine Extracts by Electron Impact Ionization Tandem Mass Spectrometry 608
A. LIGUORI, P. MASCARO, B. PORCELLI, G. SINDONA AND N. UCCELLA

Gas Chromatographic/Mass Spectrometric Measurement of Deuterium-labelled Valine, Leucine, Isoleucine and Phenylalanine in the Human Body 613
P. ZHU, Z. YU, G. WAN, H. SHA, K. SU, B. YU AND G. ZHAO

OMS Letters
Fast Atom Bombardment Mass Spectra of Thiotepa 619
M. V. KOSEVICH, V. S. SHELKOVSKY, O. A. BORYAK AND O. I. STEPANOV

Role of Matrix for Enhancement of Stereochemical Effects in Collision-activated Dissociation (CAD) Spectra of MH^+ from Epimeric Indole Alkaloids 621
O. LAPRÉVOTE, A.-M. BUI, B. C. DAS, B. CHARLES AND J.-C. TABET

NUMBER 7 JULY 1991

Editorial 625

Accounts
A Musing on the Present State of the Ion Trap and Prospects for Future Applications 627
R. E. MARCH

Electron Impact Ionized Benzoylnitroanilines and their *N*-Alkyl and *N*-Acyl Derivatives 633
N. R. AYYANGAR, A. SUDALAI AND T. DANIEL

A Study of Some Imidazo[1,5-*a*]benzodiazepin-6-ones by Electron Impact Mass Spectrometry. Characterization by Tandem Mass Spectrometry of a Distonic Fragment Ion 636
F. M. RUBINO. L. ZECCA, P. MASCARO AND W. HUNKELER

Stereochemical Effects in Mass Spectrometry. Part 10—Reaction Mass Spectrometry of Cyclic Glycols and Monosaccharides with Methylene Chloride as Reagent Gas 645
Y.-P. TU, G.-Y. YANG, Y.-H. LIU, S.-N. CHEN AND Y.-Z. CHEN

Electron Impact Mass Spectra of 5,5-Bis(carboethoxy)-1,3-dioxanes 649
M. HORN, S. MAGER, N. PALIBRODA AND M. CULEA

Dithia[3.3]phanes. 4—Mass Spectrometry of Some Dithia[3.3]naphthalenophanes 653
P. KUS

Formation and Fragmentation of the $[M + Na]^+$ Ion of Glycosides in Fast Atom Bombardment Mass Spectrometry 655
M. TAKAYAMA, T. FUKAI, T. NOMURA AND T. YAMAUCHI

Instrumentation and Methods
Improved Tuning and Calibration in Liquid Chromatography/Thermospray Mass Spectrometry Using Acetic Acid Cluster Ions 660
J. SAAR AND M. HAIMBERG

OMS Letters
Charge Changing Reactions in a Four-sector Tandem Mass Spectrometer with a Floated Collision Cell 664
R. ORLANDO AND C. FENSELAU

Mass Spectra of Isoxazolo [4,3-*c*]-*N*-alkylpiperidine Derivatives 667
M. COJOCARU, A. HASSNER AND R. MAURYA

Gas-phase Negative Ion Hetero Retro-Diels–Alder Reaction 669
D. J. BURINSKY, R. DUNPHY, J. D. ALVES-SANTANA AND M. L. COTTER

Distinctive Ion–Molecule Reactions of $C_4H_4^{+\cdot}$ Isomers with Ammonia 671
C. WESDEMIOTIS, M.-Y. ZHANG AND F. W. McLAFFERTY

Spotlights 673

NUMBER 8 AUGUST 1991

Editorial 677

Isomeric $[C,H_3,N,O]^{+\cdot}$ Ions and Their Neutral Counterparts 679
C. E. C. A. HOP, H. CHEN, P. J. A. RUTTINK AND J. L. HOLMES

Structural Characterization of Isomeric Triazolocoumarins by High- and Low-energy Collision Spectrometry of $M^{+\cdot}$, $[M + H]^+$ and $[M - H]^-$ Species 688
C. EVANS, P. TRALDI, A. CHILIN, G. PASTORINI AND P. RODIGHIERO

Mass Spectra of Some 2-(p-R^2-phenyl)-indole-3-carboxaldehyde Derivatives 695
E. CORTÉS C., R. MARTÍNEZ AND M. B. GUTIÉRREZ GÓMEZ

Unique Thermospray Mass Spectrometry of 1,4-Benzoquinone and Analogs in Ammonium Acetate Solutions 697
T. A. GETEK, M. L. VESTAL, C. H. VESTAL, W. A. KORFMACHER, D. W. MILLER AND J. P. FREEMAN

Isomer Differentiation and Structural Characterization of Penem β-Lactam Antibiotics by Mass-analyzed Ion Kinetic Energy Spectrometry 703
P. R. DAS, B. N. PRAMANIK, V. M. GIRIJAVALLABHAN AND A. K. GANGULY

A McLafferty Rearrangement in an Even-electron System: C_3H_6 Elimination from the α-Cleavage Product of Tri-n-butylamine 709
H. BUDZIKIEWICZ AND P. BOLD

Evidence that Gas-phase Ion–Molecule Reactions are Responsible for the Behaviour of Crown Ethers Under Fast Atom Bombardment Conditions 713
O. CURCURUTO, P. TRALDI, G. MONETI, L. CORDA AND G. PODDA

Instrumentation and Methods
Caesium Fluoride as a Mass Calibrant in Fast Atom Bombardment Mass Spectrometry 718
F. M. RUBINO

OMS Letters
Combined Photodissociation/Surface-induced Dissociation for Multiple Mass Spectrometry (MS/MS/MS) Studies using a Fourier Transform Mass Spectrometer 721
L. M. NUWAYSIR, J. A. CASTORO AND C. L. WILKINS

The Gas-phase Dissociation of a New Polyazapolycyclic Nitramine: Hexanitrohexazaisowurtzitane 723
R. J. DOYLE, JR

NUMBER 9 SEPTEMBER 1991

Editorial 729

MASS SPECTROMETRY IN THE USSR

Accounts
Stereochemical Effects in Mass Spectrometry of Transition Metal π-Complexes 733
Y. S. NEKRASOV AND D. V. ZAGOREVSKII

Resonance Electron-capture Mass Spectra of Azobenzene and its Monosubstituted Derivatives 739
Y. V. VASIL'EV, V. A. MAZUNOV AND E. R. NAZIROV

Structure of Ions $[ZnNCR]^+$ and $[Zn(NCR)_2]^+$ ($R = H, CH_3$) in the Gas Phase 742
S. P. PALII, N. I. RAEVSKII, D. V. ZAGOREVSKII, K. M. INDRICHAN, Y. A. BORISOV, N. V. GERBELEU AND Y. S. NEKRASOV

Reactions of Ions of Iron and Cobalt Acetylacetonates with Macrocyclic Thiourea Derivatives in the Gas Phase 746
D. V. ZAGOREVSKII, Yu. S. NEKRASOV, O. S. TIMOFEEV AND A. I. GREN'

Mass Spectrometry of π-Complexes of Transition Metals. 38—Keto–Enol Tautomerization of Molecular Ions of Acetyl- and Propionyl-ferrocenes in the Gas Phase 748
D. V. ZAGOREVSKII, T. V. VOLKOVA, S. O. YAKUSHIN, B. G. ANTIPOV AND Y. S. NEKRASOV

Pyrolysis Gas Chromatography/Mass Spectrometry of Polyvinylsilanes. Mass Spectrometric Characteristics of Alkanes and Alkenes Containing Two or More Triorganosilyl Substituents 751
V. G. ZAIKIN, V. G. FILIPPOVA AND O. B. SEMENOV

Chemical Ionization Mass Spectrometry of Halogenoalkanes with Tetramethylsilane as Reagent Gas 757
O. S. CHIZHOV, V. I. KADENTSEV AND A. A. STOMAKHIN

Relative Intensities of Metastable Peaks Measured with B/E Linked Scan and Metastable Defocusing Techniques 761
Y. W. RASHKES, E. G. SIROTENKO AND Y. M. MILGROM

Electron Impact Mass Spectrometry of Substituted Benzyl(1-allylcycloalkyl)amines and Their Cyclization Products 763
A. I. MIKAYA, S. V. LANTSETOV, V. V. KUZNETSOV, A. V. VARLAMOV AND N. S. PROSTAKOV

On-target Deuteration Technique in Time-of-flight ^{252}Cf Plasma Desorption Mass Spectrometry 765
P. V. BONDARENKO, R. A. ZUBAREV, A. N. KNYSH AND B. V. ROSYNOV

Instrumentation and Methods

Computer Processing and Interpretation of Mass Spectral Information. VIII—ARIADNA System 770
Yu. N. SUKHAREV, Yu. S. NEKRASOV, N. S. MOLGACHOVA AND E. E. TEPFER

REGULAR SEPTEMBER-ISSUE PAPERS

Laser Photolysis of Chlorodiaminotriazines and Detection of Their Fragmentation and Clusterization Products 779
A. GIARDINI-GUIDONI, A. MELE, G. PIZZELLA AND R. TEGHIL

Mass Spectral Study of Substituted Methyl (*E*)- and (*Z*)-Cinnamates Under 1,2-Dibromoethane Chemical Ionization 786
M. VAIRAMANI, M. SARASWATHI AND G. K. VISWANADHA RAO

Mass Spectra of *N*-Arylaminosulphonylcarbethoxydiazoacetamides 789
A. T. LEBEDEV, V. A. BAKULEV AND M. Yu. KOLOBOV

Behaviour of Isomeric Methyl Ethyl and Ethyl Methyl Halosuccinates Under Electron Impact. Elimination of a Halogen Atom by a Multi-step Mechanism 793
D. BORNSTEIN, A. MANDELBAUM, I. VIDAVSKY, B. DOMON, D. MUELLER AND W. J. RICHTER

Mass Spectra of Some Per-*O*-benzoyl-alditols and -aldobiitols 799
N. B. D'ACCORSO AND I. M. E. THIEL

OMS Letters

A Chloroform-resistant, Low-molecular-mass Matrix for ^{252}Cf-Plasma Desorption Mass Spectrometry 804
G. ALLMAIER, E. PITTENAUER AND E. R. SCHMID

On the Application of the Hammett Equation to Kinetic Trends Observed in Chemical Ionization Mass Spectrometry 807
M. ATTINÁ AND F. CACACE

Mass-analysed Ion Kinetic Energy Spectra and Collisional Activation Spectra of Cluster Ions of Methyl 2,3,4,6-Tetra-*O*-methyl-D-hexopyranosides with Ammonia and Methylamine 809
V. KOVÁČIK AND H.-Fr. GRÜTZMACHER

Chiral Recognition of Lithium-coordinated Diols Using Tandem Mass Spectrometry 811
G. HOFMEISTER AND J. A. LEARY

NUMBER 10 OCTOBER 1991

Ion–Neutral Complexes and the Proton-bound Dimer of Acetone 815
J. A. HUNTER, C. A. F. JOHNSON, J. E. PARKER AND G. P. SMITH

Thermal Effects on the Mass Spectra of Benzophenone Oximes Obtained by Gas Chromatography/Electron Ionization Mass Spectrometry 821
Y.-C. MA AND B. MUNSON

Influence of Experimental Conditions on the Liquid Secondary Ion Mass Spectra of Sulfonated Azo Dyes 826
S. D. RICHARDSON, A. D. THRUSTON, JR, J. M. McGUIRE AND G. L. BAUGHMAN

Thermal Denaturation of some Proteins and its Effect on their Electrospray Mass Spectra 831
J. C. Y. LE BLANC, D. BEUCHEMIN, K. W. M. SIU, R. GUEVREMONT AND S. S. BERMAN

Electron Impact Mass Spectrometry of Phenyl Thiophosphoroorganic Amides 840
Z. MOLDOVAN, M. CULEA, N. PALIBRODA, I. FENESAN AND R. POPESCU

Elimination and Rearrangement Reactions in the Electron Impact Ionization Mass Spectrometry of 2,4,5,5-Tetrasubstituted 1,2,4-Triazolidine-3-thiones 844
K. PIHLAJA, E. MÄKI, K. SCHULZE AND C. RICHTER

Mass Spectrometry of Pyrimidine Derivatives: Electron Impact-induced Decomposition of Molecular Ions of 4-Amino-substituted and 4-Amino-disubstituted 1,2-Dihydro-1-methylpyrimidin-2-ones 849
A. S. PŁAZIAK, L. CELEWICZ, K. CISZEWSKI AND K. GOLANKIEWICZ

Mass Spectra of Picolinic, Nicotinic and Isonicotinic Acids and of Their Respective *N*-Oxides 855
S. M. de OLIVEIRA, W. F. de GIOVANI, J. R. ROMERO AND J. MILLER

Hydrogen–Carbon, Carbon–Carbon Double Rearrangement Induced by Proximity Effects. 1—Formation of Methoxybenzyl Ions in the Electron Impact Mass Spectra of Substituted 1,1-Bis(dimethoxyphenyl)methanes 857
L. CERAULO, M. C. NATOLI, P. AGOZZINO, M. FERRUGIA AND L. LAMARTINA

Electron Impact Mass Spectrometry of some Unsubstituted and Chlorine-substituted Bisnaphthalimides and Related Synthons 862
L. KROTZ, R. SERAGLIA, P. TRALDI, F. GUIDUGLI, J. KAVKA AND C. GAOZZA

Electron Impact, Chemical Ionization and Negative Chemical Ionization Mass Spectra, and Mass-analysed Ion Kinetic Energy Spectrometry–Collision-induced Dissociation Fragmentation Pathways of Some Deuterated 2,4,6-Trinitrotoluene (TNT) Derivatives 867
J. YINON, D. FRAISSE AND I. J. DAGLEY

Time-dependence of the Isotope Effects in the Unimolecular Dissociation of Tertiary Amine Molecular Ions 875
S. INGEMANN, E. KLUFT, N. M. M. NIBBERING, C. E.ALLISON, P. J. DERRICK AND S. HAMMERUM

Destabilized Carbenium Ions: α-Imidoyl Carbenium Ions and the Electron Impact Mass Spectra of α-Haloaldimines and α-Haloketimines 882
T. SÜRIG, H.-Fr. GRÜTZMACHER AND N. De KIMPE

Electron Impact Mass Spectra of some Dioximes of *o*-Diacyl Benzenes 889
A. KOTALI

Positive and Negative Methanol Cluster Ions using a Direct Fast Atom Bombardment Technique 892
Y.-D. XU, V. M. JARVIS, D. E. BOSTWICK AND T. F. MORAN

Characterization of Pyoverdins and Their Hydrolytic Degradation Products by Fast Atom Bombardment and Tandem Mass Spectrometry 899
J. MICHELS AND K. TARAZ

Partial Methanolysis and Fast Atom Bombardment Mass Spectrometry of Peptides Containing Sulphurated Amino Acids 903
S. FOTI, R. SALETTI AND D. MARLETTA

Instrumentation and Methods
Triple Mass Spectrometry (MS/MS/MS) with a Floated Collision Cell in a Four-sector Tandem Mass Spectrometer 908
Z. WU, J. BORDAS-NAGY AND C. FENSELAU

OMS Letters
$[CH_2OH^+, C_2H_4]$ and $[C_2H_5^+, CH_2O]$ Complexes 913
J. TORTAJADA, H. E. AUDIER, C. MONTEIRO AND P. MOURGUES

Time-of-flight/Time-of-flight Tandem Mass Spectrometry of Multiple Incident Ions 915
D. R. JARDINE, D. S. ALDERDICE AND P. J. DERRICK

Electronically Excited State of $[C_6H_5F]^{2+}$, $[C_6H_5Cl]^{2+}$, $[2\text{-}Cl\text{-}C_6H_4F]^{2+}$, $[3\text{-}Cl\text{-}C_6H_4F]^{2+}$ and $[4\text{-}Cl\text{-}C_6H_4F]^{2+}$ 917
W. J. GRIFFITHS, M. L. LANGFORD AND F. M. HARRIS

Laser Desorption Fourier Transform Ion Cyclotron Resonance (ICR) Mass Spectrometry of Synthetic C_{60} and C_{70} from Coal-derived Coke and from Graphite 920
P. F. GREENWOOD, I. G. DANCE, K. J. FISHER, G. D. WILLETT, L. S. K. PANG AND M. A. WILSON

NUMBER 11 NOVEMBER 1991

Editorial 925

A COLLECTION OF PAPERS FROM THE NINTH INFORMAL MEETING ON MASS SPECTROMETRY. PART I

Array Detection of Mass Spectra, a Comparison with Conventional Detection Methods 929
A. J. H. BOERBOOM

Use of Bond Orders and Valences for the Description and Prediction of Primary Fragmentation Processes 936
A. SOMOGYI, A. GÖMÖRY, K. VÉKEY AND J. TAMÁS

Chemical Reactions in Fast Atom Bombardment Mass Spectrometry 939
K. VÉKEY AND L. F. ZERILLI

Fast Atom Bombardment Mass Spectrometry of Ionic Gold(I) and Gold(III) Carbene Derivatives: an Investigation of the Formation of $[M - H]^{+\cdot}$ Species 945
G. BANDITELLI, A. L. BANDINI, G. PACCHIONI, G. MINGHETTI, R. SERAGLIA AND P. TRALDI

Field Desorption Mass Spectrometry, Fast Atom Bombardment Mass Spectrometry and Fast Atom Bombardment Tandem Mass Spectrometry of Echinacoside, the Main Caffeoyl-glycoside from *Echinacea angustifolia* Roots (Asteraceae) 951
R. M. FACINO, A. SPARATORE, M. CARINI, B. GIOIA, E. ARLANDINI AND L. FRANZOI

Stereochemical Studies by Mass Spectrometry: C_{15} Nuphar Alkaloids 956
O. BORTOLINI, G. FANTIN, O. CURCURUTO, P. TRALDI, A. IWANOW AND J. T. WRÓBEL

Retrosynthetic Fragmentation in the Fast Atom Bombardment Mass Spectra of Eserine and some Related Compounds 961
F. M. RUBINO AND L. ZECCA

Gas Chromatographic/Mass Spectrometric Identification of some Organic Compounds and Odours in Poultry Wastes 967
A. STURARO, G. PARVOLI, L. DORETTI AND S. DAOLIO

Electron Impact Mass Spectrometric Investigation of Pyrrole Mono-, Di- and Tri-carboxylic Acids 972
C. COSTA, A. BERTAZZO, G. ALLEGRI, S. CATINELLA AND P. TRALDI

Mass Spectrometry in Stereochemical Problems. 6—The Case of Mono and Di-substituted Norbornanes 977
O. CURCURUTO, D. FAVRETTO, P. TRALDI, D. AJO, C. CATIVIELA, J. A. MAYORAL, M. P. LOREZ, J. M. FRAILE AND J. I. GARCIA

Instrumentation and Methods
Increase in Productivity by Networking Mass Spectrometer Data Systems 985
G. G. MELLERIO AND G. M. VAGO

Letters to the Meeting
Instrumental Aspects in Material Characterization by Means of a Quadrupole Analyser 987
S. DAOLIO, B. FACCHIN AND C. PAGURA

Mass Spectrometric Characterization of Horse Chestnut Saponins (Escin) 989
R. M. FACINO, M. CARINI, G. MONETI, E. ARLANDINI, P. PIETTA AND P. MAURI

Rearrangements in the Fragmentation of the Radical Cations of Azoxybenzene and of Isomeric Dichloroazoxybenzenes 991
C. PARADISI AND P. TRALDI

REGULAR NOVEMBER-ISSUE PAPERS

Collision-activated Dissociation Mass Spectra of Crown Ethers, Perfluorinated Crown Ethers and Related Macrocycles 997
S. MALEKNIA, C.-C. LIOU AND J. BRODBELT

Energy Disposal in Gas-phase Nucleophilic Displacement Reactions 1003
S. L. VANORDEN, R. M. POPE AND S. W. BUCKNER

Dissociative Charge Exchange of C_3F_6 1008
S. HABIBI-GOUDARZI, T. KOTIAHO, R. G. COOKS AND T. AST

Mass Spectra of 5,5′-(1,2-Ethanediyl)bis[3-(aryl)-1,2,4-oxadiazoles] 1017
R. M. SRIVASTAVA, L. T. NIELSEN AND A. J. C. N. da SILVA

Aryl Cations: Searching for and Assigning Structures to $[C_7H_5]^+$ Isomers 1019
M. C. BISSONNETTE, M. GEORGE AND J. L. HOLMES

Loss of CO from the Molecular Ions of *o*-, *m*- and *p*-Anisoyl Fluorides, $CH_3OC_6H_4COF$, with Fluorine Atom Migration 1023
S. TAJIMA, S. TOBITA, M. MITANI, K. AKUZAWA, H. SAWADA AND M. NAKAYAMA

Fragment–Molecule Adduct Ion Formation in the Mass Spectra of Cyclic *N*-Acetylamines and Related Nitramines 1027
E. P. BURROWS

Instrumentation and Methods
Improved Metal Vapor Neutralization and Resolution in Neutralization–Reionization Mass Spectrometry 1032
D. E. DRINKWATER, A. FURA, M.-Y. ZHANG AND F. W. McLAFFERTY

OMS Letters

Plasma Desorption Mass Spectrometry: Changes in the Fragmentation Pattern of Luteinizing Hormone–Releasing Hormone with Sample Preparation 1037
A. G. CRAIG, H. BENNICH AND P. J. DERRICK

Unimolecular Rearrangement in the Gas Phase. The Thermolysis of Bicyclobutyl and Phenylcyclopropyl Anions 1039
P. K. CHOU AND S. R. KASS

NUMBER 12 DECEMBER 1991

Laudatio 1043

Interannular Proton Exchange and Fragmentation of Carbonyl-protonated Benzophenones 1045
J. SUN AND H.-Fr. GRÜTZMACHER

Matrix-assisted Laser Desorption of Neutral Organic Molecules 1052
G. R. KINSEL, J. LINDNER AND J. GROTEMEYER

Investigation of Aliphatic Dienes by Chemical Ionization with Nitric Oxide 1057
H. BUDZIKIEWICZ, ST. BLECH AND B. SCHNEIDER

Alkane Loss from Collisionally Activated Alkylmethyleneimmonium Ions 1061
H. J. VEITH AND J. H. GROSS

Characterization of Synthetic *N*-Acetylcysteine Conjugates by Positive- and Negative-ion ^{252}Cf Plasma Desorption Mass Spectrometry 1065
E. PITTENAUER, A. PACHINGER, G. ALLMAIER AND E. R. SCHMID

Temperature Effects in Mass Spectrometry. Estimation of Thermal Energies of Organic Molecules 1074
F. TURECEK

Comparative Electron Impact Mass Spectra of New 5-Benzylidene-4,5-dihydro-(2*H*)-pyridazin-3-ones and 4-Benzylidene-4,5-dihydrooxazin-6-ones 1082
J.-L. CHABARD, J. TAOUFIK, J. COUQUELET AND P. TRONCHE

Fourier Transform Ion Cyclotron Resonance Study of Ion–Molecule Reactions of $[M - OCH_3]^+$ Ions of Methyl 2,3,4,6-Tetra-*O*-methyl-D-hexopyranosides with Ammonia 1085
V. KOVACIK, J. HIRSCH, D. THÖLMANN AND H.-Fr. GRÜTZMACHER

Methylcyclopropane Ion Formation by Elimination of Water from *n*-Butanol and 2-Methylpropanol Ions 1089
M. S. AHMED, C. E. HUDSON, C. S. GIAM AND D. J. McADOO

Mass Spectrometry of *N*-(Pyrimidin-2-yl)amino Acids and Their Methyl Esters 1092
A. S. PŁAZIAK, J. SPYCHAŁA AND K. GOLANKIEWICZ

Mass Spectra of some 2-(*o*-R^1-Phenyl)-indole-3-carboxaldehyde Derivatives. II 1095
E. CORTÉS C., R. MARTÍNEZ AND J. I. RAMÍREZ

Alkene Loss from Metastable Methyleneimmonium Ions: Unusual Inverse Secondary Isotope Effect in Ion–Neutral Complex Intermediate Fragmentations 1097
H. J. VEITH AND J. H. GROSS

Characterization of Cyclotetramethylenetetranitramine (HMX) Thermal Degradation by Isotope Analyses with Analytical Pyrolysis–Atmospheric Pressure Ionization Tandem Mass Spectrometry 1109
A. P. SNYDER, S. A. LIEBMAN, S. BULUSU, M. A. SCHROEDER AND R. A. FIFER

OMS Letters

Unimolecular Reactivity of β-Hydroxy Acylium and β-Carbomethoxy Oxonium Ions Mediated by Ion–Neutral or Proton-bound Intermediates 1119
J.-P. MORIZUR, E. CHAPON AND D. BERTHOMIEU

The Extreme Regioselectivity of the Water-loss from the Molecular Ion of the New Mucoactive Triol named CO/1408 1121
A. SELVA AND M. SCHIAVI

1,5-Pentanediol as a Matrix for Negative-ion Fast Atom Bombardment Mass Spectrometry 1123
M. TAKAYAMA

A Structure Determination of Furoquinolin-2-carboxaldehyde *N*,*N*-Dimethylhydrazone Derivatives 1125
P. NEBOIS, H. FILLION AND J. ULRICH

Mass Spectral Fragmentation of N^1,N^1-Dimethyl-N^2-alkyl-formamidines 1127
M. DECOUZON, J.-F. GAL, P.-C. MARIA AND E. D. RACZYNSKA